

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P14335WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/09235	International filing date (day/month/year) 20.08.2003	Priority date (day/month/year) 18.10.2002
International Patent Classification (IPC) or national classification and IPC C23G1/32		
Applicant SIEMENS AKTIENGESELLSCHAFT et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets including this cover sheet.  
☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:
  - ☒ Basis of the report
  - ☐ Priority
  - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Lack of unity of invention
  - ☒ Reasoned statement according to Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement
  - ☐ Certain documents cited
  - ☐ Certain defects in the international application
  - ☐ Certain observations on the international application

Date of submission of the demand 29.01.2004	Date of completion of this report 26.05.2004
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0, Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Mauger, J  Telephone No. +49 89 2399-8447

**Re Item I**

**Basis of the report**

- 1) The applicant has deleted the following feature from Claim 1:

The treatment of the component with a complex-forming agent in an intermediate or final step.

However, this feature was stated in the original disclosure as being significant, and the feature is actually significant for the function of the invention, taking into account the technical object which it is intended to achieve. The deletion of this feature results in situations which go beyond the content of the originally submitted version of the application. This therefore contravenes Article 34(2)(b) PCT.

**Re Item V**

**Justified finding in accordance with Article 35(2) with regard to novelty, inventive step and industrial applicability; documents and statements to support this finding**

- 1) The following documents are cited:

D1: US-A1-2002074017

D2: Derwent WPI; AN: 1986-274660(JP(A)61199085)

D3: US-A-2710271

- 2) Document D1 discloses a method for cleaning and processing degraded turbine components which are coated with MCrAlY on the outer surfaces. The components are first of all immersed in a KOH salt bath and are treated for ten minutes at 575°F (300°C), before being rinsed with water. The MCrAlY layers were then removed with acid, in a known manner. The processed components could be reused after being protectively coated again (see claims, drawings and paragraphs 0015, 0017 and 0023-0027).
- 2.1) The document D2 discloses a method for removal of casting shop sand (a coating) from turbine components. The component is first of all immersed in an NaOH melt, and is then repeatedly washed using HCl.

- 2.2) The document D3 discloses a method for pickling of, in particular, stainless steel or of a nickel alloy. The method includes treatment in a salt bath with subsequent treatment in one or more acid baths (see examples).
- 3) None of the documents D1 to D3 discloses the use of a salt bath containing sodium and/or potassium hydroxide as well as sodium oxide. The subject matter of claims 1-12 is thus novel (Article 33(2) PCT).

The object which is achieved by the use of the current salt bath is regarded as an improvement of the cleaning performance that is achieved with the known steps.

Sodium oxide reinforces the chemical action on the areas to be removed, and the object is thus achieved together with the acid treatment. This teaching is not obvious from any of the cited documents. An inventive step can thus be recognized (Article 33(3) PCT).

I. Basis of the report

1. This report has been drawn up on the basis of the following elements *(the replacement sheets received by the receiving office in response to an invitation according to Article 14 are considered in the present report as "originally filed" and are not annexed to the report as they contain no amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-9 as originally filed

Claims, No.:

1-12 received on 21.04.2004 with the letter of 19.04.2004

Drawings, sheets:

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/09235

5. ☒ This report has been written disregarding (some of) the amendments, which were considered as going beyond the description of the invention, as filed, as is indicated below (Rule 70.2(c)):

*(All replacement sheets comprising amendments of this nature should be indicated in point 1 and attached to this report).*

**see separate sheet**

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty	Yes:	Claims	1-12
	No:	Claims	
Inventive Step	Yes:	Claims	1-12
	No:	Claims	
Industrial Applicability	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations

**see separate sheet**

---

**Re Item I**

**Basis of the report**

- 1) The applicant has deleted the following feature from Claim 1:

The treatment of the component with a complex-forming agent in an intermediate or final step.

However, this feature was stated in the original disclosure as being significant, and the feature is actually significant for the function of the invention, taking into account the technical object which it is intended to achieve. The deletion of this feature results in situations which go beyond the content of the originally submitted version of the application. This therefore contravenes Article 34(2)(b) PCT.

**Re Item V**

**Justified finding in accordance with Article 35(2) with regard to novelty, inventive step and industrial applicability; documents and statements to support this finding**

- 1) The following documents are cited:

D1: US-A1-2002074017  
D2: Derwent WPI; AN: 1986-274660(JP(A)61199085)  
D3: US-A-2710271

- 2) Document D1 discloses a method for cleaning and processing degraded turbine components which are coated with MCrAlY on the outer surfaces. The components are first of all immersed in a KOH salt bath and are treated for ten minutes at 575°F (300°C), before being rinsed with water. The MCrAlY layers were then removed with acid, in a known manner. The processed components could be reused after being protectively coated again (see claims, drawings and paragraphs 0015, 0017 and 0023-0027).

- 
- 2.1) The document D2 discloses a method for removal of casting shop sand (a coating) from turbine components. The component is first of all immersed in an NaOH melt, and is then repeatedly washed using HCl.
- 2.2) The document D3 discloses a method for pickling of, in particular, stainless steel or of a nickel alloy. The method includes treatment in a salt bath with subsequent treatment in one or more acid baths (see examples).
- 3) None of the documents D1 to D3 discloses the use of a salt bath containing sodium and/or potassium hydroxide as well as sodium oxide. The subject matter of claims 1-12 is thus novel (Article 33(2) PCT).

The object which is achieved by the use of the current salt bath is regarded as an improvement of the cleaning performance that is achieved with the known steps.

Sodium oxide reinforces the chemical action on the areas to be removed, and the object is thus achieved together with the acid treatment. This teaching is not obvious from any of the cited documents. An inventive step can thus be recognized (Article 33(3) PCT).